

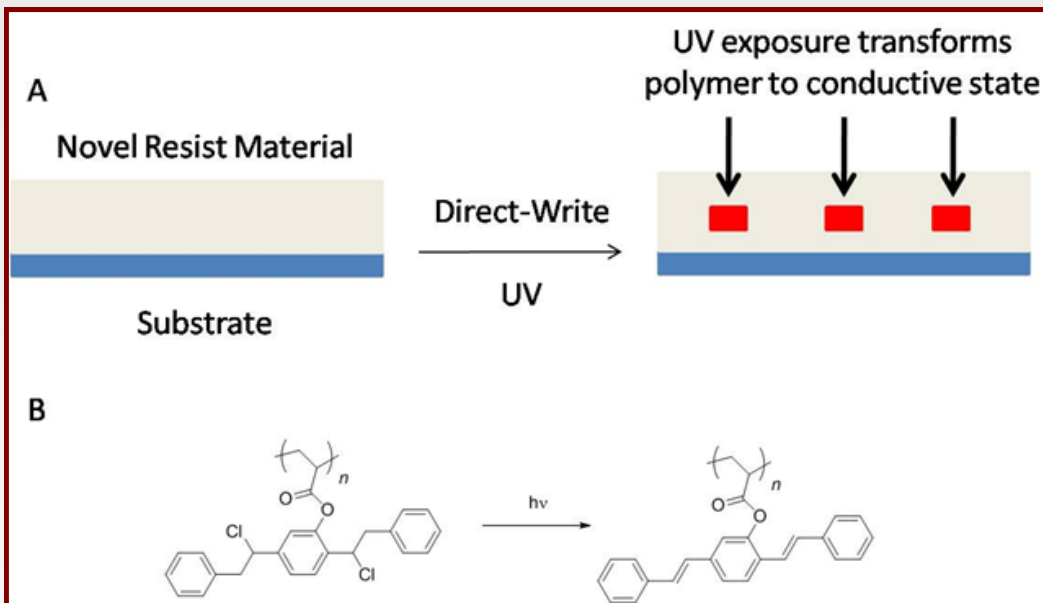
TECHNOLOGY READINESS LEVEL: 5

US PATENT # 7,955,945

KEY ELEMENTS HAVE BEEN DEMONSTRATED IN RELEVANT ENVIRONMENTS

TECHNOLOGY SUMMARY

Safety is often a major concern in high voltage electronics and energy applications containing capacitors. In the event of a fire or overheating, disabling the capacitor becomes extremely important in order to minimize damage



from occurring to both the rest of the system and nearby personnel.

Sandia has developed a novel method to produce a thin-film stacked capacitor, utilizing readily available precursor polymers which contain leaving groups that can be converted either to conducting or semiconducting polymers upon being energized. The temperature range at which the polymer will transform can be designed depending on the

leaving group chosen. Because this technique allows for two separate photo-activated functional groups to be polymerized at separate times and locations, patterning of the semiconducting or conducting polymer is simple.

POTENTIAL APPLICATIONS

- Semiconductor Manufacturing
- Medical Devices
- Microelectronics
- Textiles

TECHNOLOGICAL BENEFITS

- Fundamental Safety
Avoid uncontrolled discharge due to fire or overheating
- Easy to set failure temperature
Failure temperature chosen based on leaving group

TECHNOLOGY INQUIRY?

Contact us for more information or licensing opportunities at

ip@sandia.gov

Refer to SD # 11714

or

<https://ip.sandia.gov>